

JOURNAL

OF THE

New York Entomological Society

VOL. XXXIII

JUNE, 1925

No. 2

SOME NEW OR LITTLE-KNOWN HEMIPTERA FROM FLORIDA AND GEORGIA¹

BY ROLAND F. HUSSEY

NEW YORK CITY

The following notes are based largely upon a collection of Hemiptera which was recently submitted to me for determination by Mr. T. H. Hubbell, of the University of Florida. These specimens, which were collected by Mr. Hubbell and by Mr. F. W. Walker, were obtained principally from various localities in the northern part of Florida, but there are also a number of specimens in the collection from several places in northern Georgia. This material has proved unusually interesting, since it includes specimens taken in every month of the year. A number of the species have not previously been known from these states, while a few are new to science. I hope to publish a complete list of the species later, and in the present paper I shall deal only with some of the forms which seem to be undescribed, or which are otherwise noteworthy.

SCUTELLERIDAE

Diolcus chrysorrhoeus (Fabr.).

This species appears to vary in some of its structural characters to a certain degree. The odoriferous orifices are located

¹ Contribution from the Biology Department of the Washington Square College, New York University.

almost midway between the hind coxæ and the lateral margin of the metastethium, usually a little nearer to the coxæ; but in two Florida specimens before me they are distinctly nearer to the lateral margin of the pleuron (6:7) than to the coxæ. By a strict application of Schouteden's synopsis of the Scutellerid genera (1904, Gen. Ins., Fasc. 24, p. 43) these specimens run out to the genus *Polytes* Stål, but specifically they are scarcely separable from *D. chrysorrhæus*. It may be noted that in his generic description of *Diolcus*, Schouteden (op. cit., p. 56) erroneously states that the second rostral segment is as long as the third and fourth united. This condition is almost, but not quite, attained in the genotype, *D. irroratus* (Fabr.), but in the other three species now assigned to the genus the second rostral segment is distinctly shorter.

CYDNIDAE

Galgupha ovalis, new species.

Broad, very slightly obovate, shining black, the antennæ and tarsi testaceous; lightly but distinctly punctate except on the disc of both the pronotum and the scutellum, where the punctures are most obsolete. Head, including the eyes, twice as wide as long, flattened on the disc near the apex, the lateral margin distinctly thickened but not at all reflexed, the jugæ without oblique impressions; ocelli about five times as far from one another as from the eyes (36:7); third antennal segment less than twice as long as the second (11:6); rostrum reaching middle coxæ. Pronotum almost twice as wide as long (25:13), the sides more strongly vertical than in *nitiduloides*, the lateral margins almost uniformly convexly rounded. Scutellum not abruptly declivous behind the middle. Corium formed almost as in *nitiduloides*, the impressions somewhat shallower and continued somewhat farther back. Venter strongly punctate. Sixth ventral segment of the male very deep at the center, depressed in the inner apical angles next the genital segment. Male genital segment four times as wide as long, strongly concave longitudinally, almost flat transversely. Anterior femora with three subapical spines, the middle one much the longest; anterior tibiæ with four antero-dorsal spines on the proximal portion, followed by one or two weaker spinules.

Length (♂), 4¼ mm.; humeral width, 3 mm.

GEORGIA: Macon, 6. iv. 1923 (T. H. Hubbell). Type in my collection.

In Malloch's key (1919, Bull. Ill. St. Lab. Nat. Hist., xiii, p. 211) this species runs to *nitiduloides*, from which it may be distinguished by its different form, proportionally broader at the humeral angles and more distinctly narrowed behind, its shorter third antennal segment (in *nitiduloides* the third segment is two and one half times as long as the second), the lack of oblique impressions on the jugæ, the unreflexed margin of the head, and the very differently formed sixth ventral segment of the male. It is at once distinct from *aterrima* Malloch by the arrangement of the spines on the fore legs and the form of the scutellum.

***Geocnethus cavicollis* (Blatchley).**

I have before me one male and three females of this species, taken by Mr. Hubbell at Gainesville, Florida, in September and October, 1923. They were found buried a short distance in loose grayish sand, thinly covered with dead leaves, pine needles, and other debris, upon the University campus.

The original description of this species given by Blatchley (1924, Ent. News, xxxv, p. 85) is very brief and requires some amplification, and Blatchley's location of it in the genus *Geotomus* is incorrect. This is the first recorded nearctic species of the genus *Geocnethus* Horváth (1919, Ann. Mus. Nat. Hung., xvii, p. 245). The following notes will supplement the original description.

Head $1/7$ longer than its width between the eyes; apical margin smoothly rounded, not at all emarginate at the apex of the tylus; jugæ coarsely punctate, their surface uneven, the lateral margin somewhat callously thickened, sometimes piceous; each jugum with only the three discal erect cilia, marginal cilia lacking; eyes triangular, with a single spinule externally; ocelli four times as far removed from one another as from the eyes; bucculæ increasing in height posteriorly, coarsely punctate, their margins lightly sinuate, reaching the base of the head and concealing the entire first rostral segment. Pronotum slightly more than twice as wide as its median length, laterally coarsely punctate in front of the large setigerous puncture and with a few irregular punctures behind this, the lobes separated only by an

incomplete transverse row of close-set punctures; anterior lobe (♂) with a broad deep impunctate concave depression at the middle, or (♀) with a simple obsolete transverse impression; lateral margins almost straight, provided with four or five setigerous points. Costal margin of the corium with a subbasal setigerous puncture, and a second one just before the middle; exocorium sparsely and irregularly punctate, except on the basal third; mesocorium with a submarginal impressed line extending about two-thirds the length of the corium, thence continued to the apical margin as a series of punctures; median field of the mesocorium with one or two rather irregular rows of punctures on its basal third, and a nearly complete row next the claval suture, the apical portion of the corium otherwise impunctate; membrane not attaining the apex of the abdomen in either sex. Ostiolar canal rather indistinct; orifice subapical, lying in a semicircular notch in the posterior margin of the canal, about $\frac{2}{3}$ as far from the middle coxa as from the sternal margin. The form of the canal most nearly resembles that of the Brazilian *G. foratus* as figured by Signoret, but would seem to be less elevated above the metasternal evaporative area and more confused with the sternal suture

CORISCIDAE (*Alydidæ olim.*)

Protenor australis, new species.

Stramineous or pale testaceous, opaque, punctate with fuscous, the sides of the head and prothorax with a longitudinal vitta (interrupted by the eye) punctate with black, membrane infusate, semi-transparent. Head (Fig. 1, A) $2\frac{1}{3}$ times as long as its basal width, one-half longer than the pronotum, with about one-fifth of its total length lying in front of the insertion of the labrum; frons commonly with a sharp median impression; antennæ situated very nearly at the middle of the head, red in color, the basal segment and the basal half of the second segment yellowish, spotted with fuscous, ratios of lengths of segments I: II: III: IV = 5: 6: 5: 9, the first three segments with rather closely set erect hairs, about as long as the thickness of the second segment, the pubescence of the fourth segment shorter, largely appressed. Rostrum almost reaching the posterior coxæ, the first segment barely reaching the base of the head. Pronotum commonly depressed across the middle, one-sixth longer than its width at base, densely and finely punctate, median subcallous line very narrow, percurrent. Pro-

thorax, as seen from the side, twice as long dorsally as it is ventrally. Femora more densely pilose than in *P. belfragei*, the hind femur reaching only to the base of the fifth ventral segment. The other characters are those of *P. belfragei*.

Length, 11–11½ mm.; humeral width, 1.3 mm.

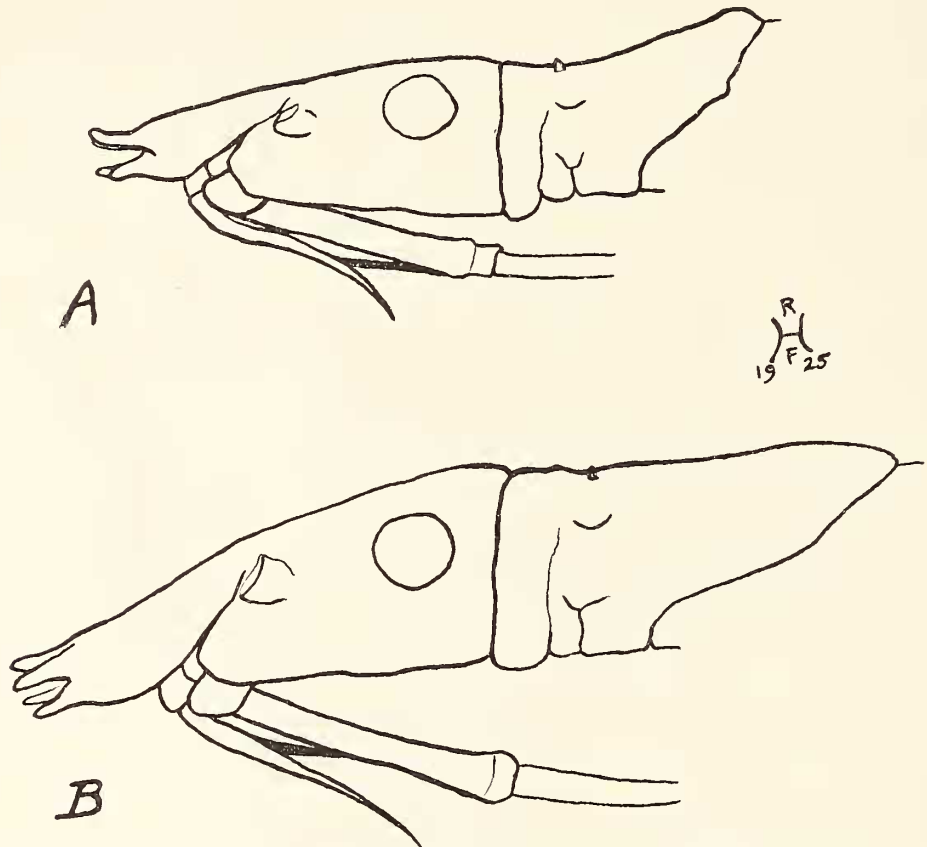
Holotype, ♀, Gainesville, Florida, Feb., 1924 (T. H. Hubbell), in my collection. Allotype, ♂, Fort Myers, Florida, 23. iv. 1912 (W. T. Davis), in Davis's collection. Paratypes: FLORIDA, Gainesville, ♂, ♀, 30. ix. 1914 (A. J. Mutchler), in American Mus. Nat. Hist.; GEORGIA, Thomasville, 16. iv. 1903, in Bueno's collection.

This species was reported from Florida under the name *Protenor belfragei* by Barber (1914, Bull. Amer. Mus. Nat. Hist., xxxiii, p. 521), on the basis of the Fort Myers specimen mentioned above. It is, however, very distinct from the northern species. It is considerably smaller, paler, not at all shining, the head is less produced in front of the rostrum, the femora are more pilose, the legs relatively shorter, and the antennae and the pronotum are differently constructed. In *belfragei* the head averages less than one-fourth longer than the pronotum and the pre-labral portion constitutes about one-fourth of its entire length; the prothorax, as seen from the side, is 2 1/3 times as long dorsally as it is ventrally; and the ratios of lengths of antennal segments I:II:III:IV = 7:7:6:10. I can detect little difference in the male genitalia.

In the five specimens which I have seen of this species, the dorsal and the ventral apical processes of the jugæ are very strongly divergent from one another. While this character is somewhat variable in *P. belfragei*, as a rule these pairs of processes are porrect and contiguous throughout their length. The most widely divergent pair that I have seen are those on the specimen shown in Figure 1, B.

The origin of these processes appears to be indicated in a nymph of *P. australis*, apparently of the fifth instar, from Warburg Lake, Alachua County, Florida, 16. iv. 1924 (Hubbell). The jugæ of this individual are piceous, terete and subtruncately rounded at the apex, while from the dorsal and

from the ventral apical angle of each jugum a heavy cylindrical spine extends obliquely forward, the two spines diverging at an angle of almost 90° . The posterior pronotal angles of this nymph bear short blunt spines, directed upward and outward, while each connexival segment has a curved, strongly flattened, setose, spiniform process, situated on the margin behind the middle of the segment. These spines are much



A. Head and prothorax of *Protenor australis*, n. sp. B. Head and prothorax of *P. belfragei* Hagl., individual with unusually divergent jugal processes.

longer on the posterior segments; they are piceous along their anterior edges and whitish behind. Their exact nature can not be made out in this shrivelled specimen.

REDUVIDÆ

Zelus (Pindus) angustatus, new species.

Elongate, narrow, covered with short white tomentum which is sparse above and dense on the under surface. Nearly uniform fusco-testaceous, somewhat paler on the disc of the pronotum; head dark fuscous; veins of the corium pale flavo-testaceous; membrane partially infuscate, the veins

brown; antennæ and legs olive-brown, the fourth and fifth antennal segments, also the apical three-fourths of the third, paler. Head about as long as the pronotum, subcylindrical, very slightly and gradually narrowed toward the base; eyes small; interocular transverse sulcus lightly impressed; ocelliferous portion of the head very slightly elevated; white tomentum absent from the genæ and from a narrow median line on the dorsal surface; first antennal segment nearly three times as long as the head (14: 5), $2\frac{1}{2}$ times as long as the second, and $1\frac{3}{4}$ times as long as the third segment. Pronotum one-fourth longer than wide, the posterior lobe one-half longer than the anterior; interlobular transverse sulcus and the median posterior impression of the anterior lobe much less deep than in *Z. socius*; spines of the posterior lobe short, blunt; discal carinæ scarcely discernable. Hemelytra scarcely attaining the apex of the abdomen. Legs unmarked.

Length, 14 mm.; humeral breadth, 2.1 mm.

FLORIDA, Gainesville, Dec., 1923 (T. H. Hubbell). Type, ♂, in my collection.

This species seems abundantly distinct from *Zelus socius* Uhler, which is a broader form with the head much more distinctly swollen behind the eyes, the interocular suture much more deeply impressed, the first antennal segment relatively shorter, the anterior lobe of the pronotum not concolorous with the posterior and with much deeper impressions, the legs banded with dark color at the apices of the femora, and the pronotal spines arising from small mammiform elevations (best seen from the side). In fresh specimens the abundant white tomentum also serves as a distinguishing character of *Z. angustatus*. This is probably the species which Van Duzee (1909, Bull. Buff. Soc. Nat. Sci., ix, p. 177) reported from Florida under the name *Pindus socius*.

VELIIDÆ

Rhagovelia choreutes, new species.

Color dull black or very dark gray, the dorsum with very short sparse yellow pile and with longer black hairs, the hairs longest on the pleura (especially in the male); basal third of first antennal segment, all the coxæ and trochantera, and the basal half of the fore and middle femora yellow; propleura, a large spot on either side of the median line at the anterior pronotal margin, and the outer one-half to one-third of the connexivum orange-yellow; apex of the frons plumbeous, shading into orange-yellow on the genæ. Occasionally one or both of the anterior pronotal spots may be pale yellow, pale gray, or even plumbeous.

Head $2\frac{1}{2}$ to $2\frac{3}{4}$ times as broad as long (in dorsal aspect), vertex somewhat more tumid and less flattened above than in *R. obesa*; width of an eye about $\frac{2}{3}$ as great as the posterior width of the vertex, or somewhat greater than its anterior width. First antennal segment about $\frac{7}{8}$ longer than the fourth. Pronotum rounded behind, entirely concealing the mesonotum, its length equal to its humeral width, distinctly but rather remotely punctate, the punctures most distinct on the posterior part. Propleura with a curving row of punctures arising behind the coxa and extending upward nearly parallel to the posterior margin; mesopleura with several punctures in front of the coxal cleft, and with a similar row of punctures paralleling the posterior margin. Odoriferous orifices located distinctly below the middle of the outer face of the posterior coxal cavities, with a tuft of six or eight long yellow setae (much longer and more distinct in the female than in the male), directed upward and outward, commonly more or less agglutinated to resemble a slender yellow spine. Anterior trochantera unarmed in either sex. Posterior femora with a long straight or slightly curved spine, at or slightly before the middle of the femur, followed by five or six smaller spines, diminishing in length toward the distal end of the femur; posterior tibiae minutely denticulate on the basal one-third or one-half of the posterior face. Intermediate tarsal segment III cleft for three-fourths of its length.

Male. Fusiform, more robust than the apterous males of *R. obesa*, the legs shorter and distinctly thicker. Antennal formula, segments I: II: III: IV = 35: 21: 19: 19. Legs, femur : tibia : tarsal segment II : tarsal segment III = (intermediate pair) 71: 53: 25: 35, (posterior pair) 54: 56: 7: 14. Posterior femora moderately incrassate, about one-half thicker than the intermediate femora at the base; long spine situated just before the middle of the femur. Genital segments together about one-third longer than the last dorsal abdominal segment.

Female. Quite similar in form to the apterous female of *R. obesa*, but the legs shorter and thicker, the connexivum differently formed, and the pronotum and the first abdominal segments otherwise constructed. Antennal formula, segments I: II: III: IV = 38: 22: 20: 20. Legs, femur : tibia : tarsal segment II : tarsal segment III = (intermediate pair) 72: 56: 28: 40, (posterior pair) 57: 65: 8: 16. Posterior femora not thicker than the intermediate femora at the base. Basal dorsal segments of the abdomen not tumid; first connexival segment without a tuft of hairs on the margin. Connexivum meeting above the last abdominal segment, occasionally above the last three segments, but not (as in *obesa*) meeting above the fourth segment, then diverging slightly to meet again above the sixth; apex obliquely truncate at an angle of about 45° , forming two short blunt spines, about as long as the width of the connexivum, not diverging posteriorly, pilose at their tips. Apex of the sixth abdominal segment with a tuft of long curved cilia on each side at the upper lateral angle of the first genital segment, and with several shorter cilia at each side below; the dorso-lateral

cilia may be more or less agglutinated, resembling a slender curved spine at either side of the genital segment.

Macropterous form. Unknown.

Length, 3.8 mm.; humeral width, 1.3 mm.

FLORIDA: Gainesville, 52 males and females, 13. x. 1923; 120 males and females, 9. iv. 1925, (T. H. Hubbell). Type (♂), allotype (♀), and paratypes in my collection; additional paratypes in the collections of H. G. Barber, J. R. de la Torre Bueno, C. J. Drake, H. B. Hungerford, H. M. Parshley, the Museums of the University of Michigan and the University of Florida, the United States National Museum, and the American Museum of Natural History.

This species agrees with *R. rivale* Bueno in the unarmed anterior trochantera of both sexes and the lack of a tuft of hairs on the first connexival segment of the female, but differs markedly from that species in the structure of the legs and in the fact that the connexivum of the female meets over the last dorsal segment. In Bueno's recent key to the nearctic species (1924, Trans. Amer. Ent. Soc. 50, pp. 244-246) it runs out to couplet 8, differing from the species which follow in the unarmed anterior trochantera of the male and the lack of the marginal tuft of hairs on the connexivum of the female, as well as in other characters, and differing from *R. Oriander* Parsh. in the structure of the pronotum, the much thicker and more abruptly swollen posterior femora, and in other respects. Bueno describes the connexivum of the female as meeting over the last dorsal segment in *R. Oriander*, but I have a female of this species (kindly given me by Professor Parshley) in which this character does not hold true.

A misleading statement appears in couplet 2 of Bueno's key (op. cit., p. 245). The second part of this couplet reads ". . . pronotum (in winged or apterous) acute or produced in a spiniform process behind; . . ." This character holds true for the apterous form in *R. Oriander* alone.